



Performing Cisco Smart PHY In-Place Software Upgrade

Feature History

Feature Name	Release information	Description
Support for Cisco Smart PHY In-Place Software Upgrade	Cisco Smart PHY, Release 22.2	You can perform in-place software upgrade on Cisco Smart PHY. Use the in-place upgrade to update your existing installation to the new version of Cisco Smart PHY, retaining your existing configuration.

Cisco Smart PHY supports in-place software upgrade. Use the in-place upgrade to update your existing installation to the new version of Cisco Smart PHY, retaining your existing configuration.



Note The software upgrade process retains all the application data.

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Prerequisites for In-Place Upgrade

1. Ensure that the Smart PHY cluster is up and running with Cisco Smart PHY 22.1 or higher. Use the deploy tool bundled along with the software package.
2. Ensure that the cluster configuration file (Day-0 Config File) used during installation is available.
3. Ensure that the ssh user private key for the Smart PHY Cluster and deploy VM is available.



Note The ssh user private key is generated at the time of Smart PHY installation and is available in the installation folder.

4. Ensure that the Deployer VM admin password and all application-specific OpsCenter passwords (cee-opscenter, opshub-opscenter, and smartphy-opscenter) are available.
5. Ensure that a Staging environment having network connectivity with Deployer VM and Cluster VMs is available.

Limitations for In-Place Upgrade

- You can use the command `./deploy -c <config.yaml> -u` to upgrade the cluster charts or the application images.

You cannot use the `./deploy -c <config.yaml> -u` command to modify any cluster parameters and environmental parameters such as NTP server IP, DNS configuration, VM IP, datastore folder, etc.

See [Deploying the Deployer VM and Cisco Smart PHY Cluster](#) to modify any cluster parameter.

- If you update the vCenter password post initial cluster installation, then you cannot proceed with the in-place upgrade.

Use the following steps to update the vCenter password in the deployer environment configuration before performing the in-place upgrade.

1. Download the running environment configuration file using the following command:

```
curl -k -X GET -u admin:<DEPLOYER RESTCONF PASSWORD>
https://restconf.smi-deployer.<DEPLOYER INGRESS HOST>/restconf/data/environments -H
"Accept: application/yang-data+json" -H "Content-Type: application/yang-data+json"
> environment.json
```

The `environment.json` configuration file is downloaded. Here is an example of the content in the file:

```
{
  "tailf-smi-cloud:environments": [
    {
      "name": "vcenter-smartphy-cst",
      "vcenter": {
        "server": "cst-vcsa.cisco.com",
        "allow-self-signed-cert": true,
        "user": "cst-smartphy.gen",
        "password": "< ENCRYPTED-OLD-PASSWORD >",
        "datastore": "",
        "cluster": "SmartPHY",
        "nics": [
          {
            "network-name": "smartphy_vlan327"
          }
        ],
        "datacenter": "CST-PodA",
        "host": ""
      }
    }
  ]
}
```

2. Replace `ENCRYPTED-OLD-PASSWORD` with the new password in plaintext format and save the file.
3. Execute the following command to patch the cluster:

```
curl -k -X GET -u admin:<DEPLOYER RESTCONF PASSWORD>
https://restconf.smi-deployer.<DEPLOYER INGRESS HOST>/restconf/data/environments -H
"Accept: application/yang-data+json" -H "Content-Type: application/yang-data+json"
> environment.json
```

Upgrading Smart PHY

Use the following steps to perform Cisco Smart PHY In-Place software upgrade:

Step 1 Download the latest Smart PHY release package using the link shared by Cisco.

Step 2 Copy the downloaded Smart PHY release package to the Staging environment.

```
cp download-path/smartphy-installer-<new-version>.tgz
staging-server-path/smartphy-installer-<new-version>.tgz
```

Step 3 Extract the image contents.

```
cd staging-server-path && tar -xvfz smartphy-installer-<new-version>.tgz
```

Step 4 Access the new installation directory.

```
cd smartphy-installer-<new-version>
```

Step 5 Copy the cluster configuration file used for cluster installation into the new installation directory.

```
cp filepath/config.yaml smartphy-installer-<new-version>/config.yaml
```

filepath/config.yaml is the cluster configuration file that is used in the previous Smart PHY install or upgrade.

Step 6 Copy the SSH user private key file for Deployer VM and Cluster VM into the new installation directory.

Note The private key must be in pem format and the name of the private key must be identical to the cluster configuration file entry.

```
cp filepath/private-key-file.pem smartphy-installer-<new-version>/private-key-file.pem
```

filepath/private-key-file.pem is the private key file that is generated during the previous Smart PHY install or upgrade.

Step 7 Upload the application software package to the Deployer VM.

```
./deploy -c <config.yaml> -u -s
```

This step is optional. Use this step to upload the application software package to the Deployer VM and perform the upgrade later using Step 8.

Observe the Deployer tool logs visible on the terminal and check whether the package is successfully uploaded into the Deployer VM. You can also log in to the Deployer VM and check the availability of the software package under the /data/software/images directory.

Step 8 Install the application software package software to the target cluster.

```
./deploy -c <config.yaml> -u
```

Step 9 Continue monitoring the log statements in the Deployer tool and provide the password, if prompted. The upgrade process may take several minutes to complete. On successful completion of the upgrade, the message `Upgrade has been done successfully!!` displays on the terminal.

Understanding the Rollback Process

When the deploy tool initiates a rollback process, the cluster restores to its original state. This rollback operation may take several minutes to complete. After a successful rollback, the following message displays on the screen, `rollback has been done successfully!!`

You may see the `Force upgrade process failed and rollback to the previous version also failed.` error message if there are rollback errors. Contact [Cisco Technical Support](#) if you see this error message.

An unsuccessful cluster sync may trigger a rollback.

Troubleshooting Common Error Messages

During the upgrade process, you can monitor the Operational Hub Alert Dashboard for upgrade related alerts. The following table describes common errors which may display during a software upgrade.

Table 1: Common Error Messages Displayed During a Software Upgrade

Error Message	Reason for Error Message	Action Performed
<code>cluster sync failed during the CNF upgrade. Automatic rollback will be initiated</code>	Cluster sync is unsuccessful.	The Deployer tool automatically performs a rollback.
<code>post-upgrade cluster status check failed, not all of the services in the cluster is healthy?</code>	The charts do not deploy or the essential pods fail to load.	The upgrade process continues.
<code>Unable to modify cluster configuration</code>	The Deployer tool undertakes additional functionality which requires special configuration changes.	The upgrade process automatically retries the configuration changes. Requires no manual intervention.

For any other issues, contact [Cisco Technical Support](#)